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that we missed others, as they should be common here if anywhere. I found a nest at Eaglesmere, Sullivan County, Pa., in 1890.

63. *Sitta carolinensis*. WHITE-BELLIED NUTHATCH.—A few pairs, one near the house.

64. *Parus atricapillus*. BLACK-CAPPED CHICKADEE.—Abundant in all kinds of open woods and in trees along the road.

65. *Turdus mustelinus*. WOOD THRUSH.—Not seen at all the first few days where the Hermit was abundant. One was taken on Straight Creek, apparently very much out of place, where the wood was quite dense and damp. A few others were seen.

66. *Turdus fuscescens*. WILSON'S THRUSH.—Only one on the hillside above Straight Creek, acting very much as though a nest was near.

67. *Turdus aonalaschkæ pallasii*. HERMIT THRUSH.—Abundant; four or five nests, three on mossy banks at the side of the road; two I discovered from a wagon.

68. *Merula migratoria*. ROBIN.—Very common all over the open upland and near the clearings in the valleys.

69. *Sialia sialis*. BLUEBIRD.—Common around the farms.

SUMMER BIRDS (JULY 15–AUG. 13, 1894) OF THE RHINE.¹

BY RALPH HOFFMANN.

THE interest and pleasure which most naturalists experience in making field observations is often a reward for their somewhat tedious labors in other branches of the science to which they may devote their time. Especially when one is so fortunate as to carry his opera-glass into fresh woods and pastures new, the increased interest and heightened pleasure amply repay him for the discomforts of the journey. To me, in my capacity of amateur ornithologist, there has come a rather large share of these lighter labors, so that my slight connection with ornithology has proved, in a way, to be all play and no work. I hoped, therefore, when I looked forward last spring to a summer in Germany, to note down something which might be of interest to the members of the

¹ Read before the Nuttall Ornith. Club, Cambridge, Mass., Dec., 1894.

Club, and as I look back now to the excitement and delight which accompanied the study of so many new birds, I trust that I can share these pleasures in some degree with those whose recitals of labors in other fields have so often interested me.

In order to give a degree of coherence to the notes which I have to present, I shall try to group them about the stream which most travellers ascend for other study than that of its fauna, but first I shall sketch briefly the characteristics of twelve or fifteen birds which formed the staple diet, the daily food, so to speak, of my field observations. These sketches are slight, as I have made very little attempt to supplement my own notes by consulting the books; I hope, however, they will add a little color to the subsequent pages.

Blackbird (*Turdus merula*).

When Bottom sings in the enchanted wood,

“The ouzel-cock so black of hue
With orange-tawny bill,
The throstle with his note so true,
The wren with little quill,”

he enumerates the familiar songsters of England, and heads his list with the Blackbird. From the time of Shakspeare the Blackbird, the Wren, and the Redbreast are the familiar birds of English literature, so that with the exception of the Lark, the Nightingale and the Cuckoo, there were no birds I was more anxious to see.

July, however, is an even more inauspicious month in Europe than here; so many of the birds are early breeders. The Cuckoo and the Nightingale were silent, and to me invisible, and still remain mere names. With the Blackbird or Black Thrush, as the Germans call him, I was more fortunate. He was, if not so numerous as our Robin, quite as ubiquitous, whistling from the gardens and parks of the cities, and from the hillsides and glens of the country. His length is the same as that of his cousin, our Robin, and he suggests this bird in many ways. He has the same way of running forward, and then drawing himself up, and he plants his feet and pulls at an angle-worm in precisely the same way. He scratches more in the leaves than our bird, showing in this his

turdine affinities, and he has the Hermit Thrush's trick of raising his tail sharply after alighting. The young have brown backs and reddish streaked breasts, so that they suggest the Robin still more strongly.

The Blackbird's song is bright and invigorating; I heard it more from single birds than from choruses. Sometimes as the singer sat on the spray of some tree on the hillsides, the disconnected and vigorous phrasing suggested the song of the Brown Thrasher. The nest is placed in bushes instead of in trees, and the bird is more truly resident in Germany than the Robin is in Massachusetts, the northern birds joining their brethren of Central Europe for the winter.

Black Redstart (*Ruticilla titys*).

One of the most characteristic and familiar birds of Germany is the Redstart, a bird related, not to its American namesake, which it resembles very slightly, but to our Bluebird. In the domestic economy of German Nature, it seems to take the place of the Bridge Pewee (*Sayornis phæbe*). In Germany I found the Black Redstart by far more common than the Black-throated, the commoner British species, though I saw the latter not infrequently. It may be of interest to hear, on the authority of Mr. Saunders, that the male acquires his black breast by the wearing off of the gray tips to his feathers, as in the case of the Bobolink.

The Redstart haunts gardens and yards, flying constantly to the garden walls or house roofs, where it bobs at intervals like a Winter Wren. Its food consists of insects, which it pursues on the wing with considerable dexterity.

The Redstart arrives and breeds early and I failed to hear the song, which to the German villagers heralds the advent of spring.

A nest of this bird was shown me, on a shelf over some cellar stairs. To reach it the bird had to fly from the garden through the back door, which the occupants of the house kept open for it.

The German name, 'Rothschwänzchen', or Red-tail, corresponds to the English, Redstart, from the A. S. *steort*, a tail.

Redbreast (*Erithacus rubecula*).

This bird, so endeared to the British heart, rears his brood in clearings and in thickets; he is retiring rather than shy, and several that I saw were in yards and about dwellings, to which, as is well known, the bird resorts in winter for crumbs and broken meat. In a garden in Heidelberg I saw one frequently, hopping about among the tables disputing with Chaffinches for the fallen crumbs.

The Red-breast keeps to the ground much more than his relatives, the Redstarts, but like them he has a trick of flirting his tail and courtesying when observed.

The Tits (*Parus*).

Europe is fortunate in the abundance of these cheerful and familiar birds. We are thankful all winter for our Chickadee, but in Germany, I was assured, it was no uncommon sight to see, in winter, four species, all picking at the same bone or candle, suspended for their use. I found six species in all, four of which were generally distributed and common.

The commonest was the Blue Tit (*P. cæruleus*), a charming and lovable bird, richly colored and active as a squirrel. I found an apple tree on one occasion, which was, so to speak, infested with Blue Tits; they hung to the smaller twigs, pecked at the leaves, and gleaned along the branches.

Two other species, which are often associated, are the Coal Tit (*P. ater*), and the Swamp Tit (*P. palustris*). These two and the Blue Tit, are smaller than our Chickadee, hardly larger in fact than Kinglets. In winter they are everywhere, but in summer the Coal Tit seems to prefer coniferous woods. These species are nimble and noisy, prying out insects from the bark, hammering open seeds, and conveying through the woods flocks of Kinglets, Creepers and other birds.

The longest and most sedate of the family is the Great Titmouse (*Parus major*), half an inch larger than our Chickadee. All four of these species are loquacious and their notes are numerous.

Many of them suggest the Chickadee, especially his *tee, dee dee*, and the *turre day* notes, but I heard nothing resembling his song.

Wren (*Troglodytes parvulus*).

In hedges and thickets, in fact in just such situations as a Winter Wren would choose on migration, skulks the Hedge-king, as the Germans call him. The Wren is a resident species; he was still singing freely in August, and I found the song hardly distinguishable from that of our Winter Wren.

White Wagtail (*Motacilla alba*).

This is one of the most characteristic birds of Germany, and I suppose, of the Continent generally, and in England a closely allied form is a conspicuous member of the avi-fauna. In the fields, especially when ploughed, in the meadows and in the village streets, this bird walks daintily about, or takes a short quick run after his insect prey, his long tail nicely balanced and constantly oscillating. He flies often to the ridge-poles of houses, tops of posts or other conspicuous positions, and one whom I found on the Drachenfels, flew to the very top of the ruined tower. Nesting is early with the Wagtail, and in July the young were following the parent birds about the streets, eager for food. The period of song is said to be very short, and I heard nothing but a few call or alarm notes.

The Wagtails were flocking in August, but they remain in considerable numbers throughout the winter.

Swallow (*Hirundo rustica*).

For any readers of Gilbert White no European birds possess more interest than the Hirundinidæ, a term which, in his day, included the Swift. No suspicion crossed the good rector's mind that, one day, the Hummingbirds would wage on the Swallow family fierce osteological war for the possession of this bird.

The Swallow was one of the first land birds that I saw in Europe, and I hardly ever lost sight of him and his kindred. The call note, the low song, often given from the ridgepole, and

the marvelous dexterity of the Swallow proper, the Country Swallow, to translate his Latin name, reminded me at every turn of the Barn Swallows, which I had left behind me. The specific name is, however, somewhat misleading, for the Swallows haunt not only the grassy meadows, but the smaller towns as well, where they are conspicuous in all the paved streets. They beat the squares and gutters as regularly as a Marsh Hawk does a meadow, flying up and down, sometimes hardly a foot above the stones, turning the corners and coming down the other side, in and out among the people and off at last to the nest. Swallows breed in any sheltered corner, often in chimneys, whence the German name, Smoke Swallow. I observed one passing to her nest through a hole in a shed door.

They linger till September or October, and gather in great flocks utilizing the telegraph wires, as with us, till a favorable night for their departure. Their return in April has long been connected in proverb and song with the approach of warmer days.

Martin (*Hirundo urbica*).

This is a characteristic bird of the towns wherever the eaves of buildings, preferably of stone, offer him a covering for his cupshaped nest. I found them also in the mountains, where there was too little grass-land for the Swallow. The Martin is gregarious, and the hotels fronting on the Rhine were often tenanted by colonies of one or two dozen. The birds avoided the street, however, and hawked over the river, where their glossy backs and white rumps flashed in and out among the plain brown backs of their cousins, the Bank Swallows. Their note is a single rough monosyllable, *spritz*, suggesting that of the Cliff Swallow. They were still feeding young in the nest, August 8, evidently the second brood.

Chaffinch (*Fringilla cœlebs*).

This handsome and confiding bird was as characteristic of the village street as either the Wagtail or the Redstart, and was also common in every bit of woodland. The parks and groves resounded, in early July, with his cheerful and vigorous song,

resembling, to a considerable degree, that of the Purple Finch, though perhaps a trifle stronger. In the streets and in the roads the Chaffinch picked up seeds, insects, or fallen refuse.

In an open air restaurant at Heidelberg, I amused myself by throwing crumbs to the Chaffinches, who approached often to within a foot or two of my chair, but their bread was often snatched from their mouths by the more vigorous, if less welcome Sparrows.

At evening the parks or open spaces in the cities resounded with the call notes of this bird, *fink, fink*, and a peculiar *skree, skree*. From their call note comes their German name, 'Finke', and the English, Finch.

They are resident, and for part of the winter the males separate from the females.

Yellow-hammer (*Emberiza citrinella*).

This is a bird of the fields and hillsides, especially in the neighborhood of farms. He feeds on insects and in winter on seeds. He is not shy, and not as restless as the Chaffinch. The Yellow-hammer was perhaps the freest singer in July, and was still singing in August; in fact he reminded me of the Indigo-bird in his fondness for hot exposed situations, railroad embankments and even telegraph wires. Everywhere his deliberate song rose at regular intervals through the quivering air. The song is not loud but carries a surprising distance, and has something of the Grasshopper Sparrow's quality. It may be imitated by the syllables *zi, zi, zi dräh*.

The bird nests near the ground and raises two broods. He is a winter resident.

Skylark (*Alauda arvensis*).

The Lark and the Blackcap were still in full song in the middle of July, though both ceased singing in August. The grainfields of the Rhine and Neckar valleys stretched in what seemed to my New England eye a tremendous expanse of yellow waves. Among these, from morning till night, the Larks rose, sang and descended

to their little domains in the wheat. The descent is gradual till the bird nears the ground, when he darts with great speed into the cover. When feeding, the bird walks slowly, and nods his head at each step.

The Lark is one of the most numerous of European birds, but notwithstanding his two broods, that he withstands his thousand enemies is a mystery. His habit of nesting on the ground and in the cornfields exposes him to the attacks of many animals and to the mischance of an early harvest. During migration, which is accomplished in vast flocks, he suffers severe loss from netting, but holds his own and returns each March, at the first sign of spring, to his chosen field.

Swift (*Cypselus apus*).

The common Swift of Europe I found everywhere, from Holland to the interior of Germany, but especially abundant on the Rhine and in Nuremberg, where the fortress was besieged by a screeching multitude. The bird is an inch and a half longer than our species, and the presence of a well shaped tail, and the long recurved wings make him far more dexterous in the air. His flight is rapid, and he turns after his insect prey as swiftly as a Swallow.

The note is a curious screech, fine and rasping, resembling a bat's squeak. This the Swifts utter sharply, as they drive past in twos and threes, and sometimes, if they come close, the effect is startling.

The Royal Palace at Amsterdam was a favorite breeding place of the Swifts, who had built their rude nests of straw in the stone gargoyles, or in niches along the sides of the building, nor had their excrement added anything to the appearance of the somewhat unpretentious structure. In Nuremberg, the crevices in the ruined wall surrounding the fortress were full of nests, and at evening as I walked along the wall, the moat was full of screeching 'devillings' as the English call them. Their German name is 'Mauer Schwalbe' or Cliff Swallow.

By August the Swifts had almost entirely left their breeding places, and a few stragglers alone remained along the Rhine.

These then are the birds which on a summer day in Germany one cannot fail to see. How they are distributed, in what haunts, and in what numbers, how they and their rarer kindred enter into the pictures of Rhine scenery, I shall try to show by the following notes.

My time on the Rhine was divided between two points on the upper Rhine, Bonn and St. Goar, and a short trip along the sluggish waters of its lower course.

The first German soil that I trod, after I shook the dirt of Cologne off my shoes, was that of Bonn, where I spent Sunday and Monday, July 14 and 15. I was impatient to get into the fields, and taking a ferry Sunday morning, swung slowly across the stream, towards the opposite bank, where a low range of vineclad hills formed the outposts of the Siebengebirge. The familiar harsh note of the Bank Swallow, the *skreeing* of Swifts, and the cry of the Martins which I heard here, proved the constant attendants of my journey along the river.

In the fields which lay along the opposite bank, my first Skylark flew to the ground almost at my feet, with a note which suggested that of the Shore Lark. A moment later I heard one singing overhead. The song reminded me in quality of a Bay-wing's (*Poocates*), but the singer's height and the length of the performance made it fairly inspiring. A slight disappointment which I felt at first, soon wore off and the song grew to have a great charm for me, before the gathered harvests made the singer a silent gleaner among the stubble. In a neighboring furrow, I made another acquaintance, destined to be an almost inseparable companion of my travels. This was a White Wagtail, who was picking his way over the upturned soil, walking with dainty steps, and balancing his long tail with a skill born of much practice.

The chaussée lay white and hot under the fierce sun, so I turned off past a gravel-pit, where Bank Swallows were breeding, to a little hill, the 'Finkenberg', formed, like the rest of the Rhine banks, of loose shingly stone, and covered with a sparse growth of small oaks. Here my scanty knowledge of European birds soon proved insufficient to identify the small restless creatures which eluded observation among the leaves, or to trace to their source the varied notes which issued from the thickets and

coverts. One songster in particular led me a long and fruitless chase, but I was more fortunate when I heard him again the next morning. At the foot of the hill, when I descended on the other side, I found a garden and orchard through which ran a brook. This seemed a favorable place for observation and so it proved to be. Several Flycatchers darted from their perches, to return with their booty; Brown Creepers climbed the trunks of the apple trees, whispering to each other as stridently as they do here in winter, and differing apparently from ours only in the lack of a trinomial name. They were convoyed too, as ours are, by Titmice, larger and handsomer than the Chickadee, but very similar in habits. On the garden walls or on the roofs of the houses sat Redstarts, fine bluish gray birds with brick red tails, which they snapped like Phœbes. From the vineyards and from the hill-sides came the fine, thin notes of the Yellow-hammer, and in the village on the river banks, Swallows flew close to the pavements, turning the sharp corners, and passing in and out among the people with surprising ease.

The nearest of the Siebengebirge to the Rhine is the famous Drachenfels, which in fact rises from its banks, and is crowned with the most interesting ruin of the lower Rhine. This I climbed the next day, and was rewarded by the beauty of the foot-way and by the charming prospect from the top. A little larch and spruce grew on the rocky summit and here I found my second Titmouse, of the half-dozen which I saw in Germany. This was the Swamp Tit, very like our Chickadee in color; he was holding a seed on a limb and opening it. Here, too, I heard again my elusive songster of the previous day. He was concealed in some shrubbery near the top of the crag, but his song was loud and wild and very fine; finally he came into view and proved to be the Blackcap, who among songbirds is rated very close to his cousin, the Nightingale.

Near the restaurant by which every interesting spot is crowned, or infested, according as the traveller's inclinations are prosaic or romantic, was a little yard where a bird was feeding, who at once attracted my attention by his fine colors and tame disposition. He was a Chaffinch, the characteristic bird of the streets and yards, sharing with the House Sparrow the society and sup-

port of man, but never, so far as I could find out, abusing his privileges. The Sparrow, I found, was disliked in Germany, almost as much as he is here.

On descending the hill I came to a little town on the banks of the Rhine, where I waited for the return of the boat to Bonn. The trees in the town gardens were gay with cherries and apricots, and here and there among them I heard the whistle of a Blackbird, for he as well as his American cousin, the Robin, likes to sheathe his gold dagger of a bill in a juicy cherry. The houses along the river were the resort of Eave Swallows, Martins as the English call them, corresponding curiously to our Cliff Swallows. Their cup shaped nests of mud lined the eaves, and the white rumps of the birds flashed in the sunlight, as they flew up to feed their hungry young.

At Coblenz, four hours above Bonn, the fortress of Ehrenbreitstein marks the beginning of the highlands of the Rhine, through which the swift stream has cut a winding course between rugged banks, cut in their turn by tributary brooks. In the midst of the most picturesque portion of these hills, on a narrow strip of land at their base, lies the town, or street more properly, of St. Goar, a single line of houses directly under the bank. On the hill above it stands a mighty ruin, Ruine Rheinfels. The opposite strand is occupied by another line of houses, and above and below this, stand two fine ruins, Katz and Maus. A mile or so farther up, the Lorelie-rock rises so precipitously from the river that the railroad has to pass under it through a tunnel. The hills are flat topped as if the whole surface had once formed a plain, now cut down for a second time in all directions.

In this charming town I spent July 18 and 19, and returning Aug. 11, spent another afternoon and morning on the hillsides and in the fields. The steep slope directly behind the town was almost entirely included in a large estate, through which I obtained permission to wander. The whole hillside was thickly wooded with a young growth of mixed timber, through which paths led in all directions. Here and there vistas had been cut, overlooking the swift stream below, or giving a distant view of the Ruine Katz on the opposite shore. This wood I visited twice and found in it each time a roving crew of small birds, constituted so like our

woodland bands that I almost expected to hear the lazy trill of a Pine Warbler from the American pines which had been planted there. There were Titmice, not only the two acquaintances I had made among the Siebengebirge, but three other species as well; the Coal Tit, also resembling our species; one individual of the strange Long-tailed Tit, his body smaller than a Kinglet's with a tail three-fifths as long again; and the charming little Blue Tit. This Tit was rarely quiet and hardly ever right side up. Side by side with the Tits worked a Nuthatch, very closely resembling our Canadian species, though nearly as large as *Sitta carolinensis*. In winter the company includes Kinglets, which breed, in Germany, in forests of spruce and fir. Instead of our Warblers and Vireos there were Wood Wrens and Willow Wrens, small birds related to the Kinglets. Chaffinches and a Flycatcher took the places of the Snowbirds and Phoebe, which might share our woodland with such a crew. Here and there in the wood were moist ledges where water dripped past nodding harebells into a small fishpond below; here I saw Redbreasts, shyer than I had expected, staring at me with large eyes which betrayed their kinship to Bluebird and Thrush.

In the afternoon, I took a little tug which puffed across the swift current and landed me under the shadow of the Ruine Katz. A path led up the rocky ridge to the entrance of the ruin. My former experience warned me that I should have the company of a guide, if I entered that way, so I took the liberty of climbing the hill behind the castle and scaling the wall which protected the rear. The great court in the centre of the ruin was overgrown with bushes and trees; ladders led half way up the round tower which I climbed, but startled no Owls from their ruined retreats. A pair of fine Falcons, as large as the Peregrine, swept past me later, and I was told that they bred on the tower. A Buteo was circling in the sky and later I saw a small Hawk, perhaps a Kestrel, hovering over the river. Leaving the ruin, I climbed back with some difficulty. The hill, or Rhine bank, rose for about a hundred feet above the spur on which the ruin stood. The poverty of the soil lent an Alpine character to the vegetation; the hill was bright with yellow sedums, pinks, various flowers of the gorse family, and the first purple blooms of the

heather. A gold-green lizard slipped into a bush, and climbed it as nimbly as a snake.

Here and there in a thorn bush, I found a Red-backed Shrike, or his plainer colored mate, and once the Great Gray Shrike slipped to a topmost spray, like our winter visitor. This is a rare bird in Germany, where he is persecuted for his murderous attacks on the smaller birds. From every side came the song of Yellow-hammers. Their lemon yellow heads, brown bodies, and white tail-feathers made them an easy mark for my opera glass.

The vineyards were the resort of numerous fringilline birds. The vines are planted on a steep succession of sloping banks, separated by stone walls, which keep back the avalanche of loose scaly stones, which threaten to engulf them. Here I found another rare bird, a Bunting, with white stripes on his ashy forehead; Linnets, too, with reddish cap; and Goldfinches, brilliant and restless birds, painted by the Creator, as the Germans tell their children, from the leavings of all the paint pots used during the creation.

It was with a feeling of surprise, when I had climbed the hillside, that I came on broad fields of grain, men and women reaping and binding, and Larks singing constantly overhead. The ascent was that of a mountain; the summit was a smiling plain. Here I was never out of the sound of Larks; scarcely had one shot down into the grain, when another began his *skree, skree*. I timed one, and found he sang for two and a half minutes. According to the books, however, it is not an unusual thing for one to remain in the air for a quarter of an hour. When I visited the same spot a month later, no Larks were singing, but here and there one flew from the stubble. Wagtails were numerous, particularly after the stubble had been turned over, and, in one field, a Pipit followed me for some distance with signs of distress. Crows, in voice and aspect hardly distinguishable from ours, also frequented these fields.

Here and there among the fields, or in the hollows between, clusters of trees had been left, and from among these the hoarse scream of the Jay startled me. It was some time before I discovered the author. Though so large a bird (he is five inches longer than the Blue Jay), he conceals himself with all the dex-

terity of a thief, which no doubt he is. Finally I got a good view of one,—the white rump, as he flew, the rich brown of the back, and the fine steel blue patch on the wing, so much in demand for artificial flies. In these groves, too, the Turtle Doves took refuge, when I frightened them from the grain fields. Their rounded tails are tipped with white, as in our species.

Beyond the grainfields, I often came to picturesque villages, the tiles of the houses slate-gray and the sides and ends covered with laths crossed in the plaster.

After walking for some time, through the fields, in the direction of the Lorelei-rock which overhung the Rhine on my right, I heard the sound of water below me to the left. I passed through a belt of pines and climbed down the loose, shingly side of a steep hill, crossed two broad chaussées and after a steep descent found myself in a narrow wooded valley. A noisy brook ran over the stones under arching trees, among which a Bulfinch showed for a moment. Wood oxalis grew in the damp moss, and ferns and brambles formed a dense tangle. I descended the valley, which broadened from time to time to a strip of meadow, and at last a house appeared with a sluice and a mill wheel. The sides of the valley were steep and clothed with pine. The brook and the neighboring road wound continually, sometimes passing directly under jutting rocks; now and then I came to gray-tiled houses, each with a wheel to which the noisy waters could be bound. The Rhine with its steamers and long lines of heavy barges, seemed far away and when I found that this little valley was the "Schweizer Thal," I thought the name most apposite.

Blackcaps sang in the willows, a Hedge Sparrow scratched under the bushes that lined the stream, and from far up on the hillside came the wild whistle of the Blackbird. When I revisited this mountain glen (for so it seemed) in August, I found two interesting birds which I had not seen on my former walk, but which no doubt were regular residents. One was the Mountain Wagtail, who was leading his young over wet stones which blocked the brook, and the other was a Water Ouzel or Dipper. This strange bird, a Thrush who yet dives, swims and lives on fish, was standing near a mill wheel, up to his reddish belly in the foaming water. When he saw me, he flew swiftly along the stream, and disappeared under the arch of a small bridge.

Soon the valley turned towards the river, the Blackcap's song and the Blackbird's whistle sounded more faintly from the mountain side, and Redstarts flew from the walls to the houses, which now became more numerous. As I paused a moment to look back, the last gleam of sunlight fell on the rugged outlines of the hills. I heard once more the Blackbird whistling far up the glen, and then, stepping out into St. Goarshausen, came upon the busy Rhine flowing by as swiftly as it did when Cæsar bridged it. High in air was a multitude of birds, which also circled there no doubt in Cæsar's time, great crescent-shaped Swifts, Martins and Swallows, and low over the river Bank Swallows uttering their harsh notes.

The Swifts and Swallows, as I have said before, are constant attendants of a Rhine journey in summer. From Mainz to Cologne they circled about the steamer, and at Arnheim, in Holland, where in August I took the boat for Rotterdam, I found them again. Above Bingen, before the river enters the Highlands, and at Coblenz where it escapes from them, there are broad expanses, where I was surprised to see not only Terns but Gulls, two hundred miles from the ocean; the Tern was our common species, and the Gull corresponded to our Bonaparte's. Herons, too, frequented these upper reaches, and from the low islands the steamer's wash drove Sandpipers, closely related to our Actitis.

Below Arnheim the river is more sluggish, and for some distance before it reaches Rotterdam, it attains considerable breadth. Great barges ascend it here, or pass by one of the numerous canals and branches, to the River Maas. The country was here very flat and fertile. The fields were full of sleek cattle, among whom, in July, Starlings innumerable had walked. Now they had all wandered off in one of those vast throngs which blacken the sky in Autumn. The Swifts too were very scarce, only now and then one showed his scimitar wings among the Swallows. Lapwings and Curlews fed in the fields, which were intersected by countless ditches. When the boat disturbed the Lapwings, they rose and with shrill cries and nervous flight, mounted upward, their white rumps and bellies contrasting with their glossy backs. Quite as conspicuous and with the same contrasting colors, were the occasional Magpies, which flew up from the banks, flirting

their handsome tails. The reedy shores of the river were the haunts, no doubt, of Ducks, two of which flew past us, and a Heron, gaunt and gray, gazed at the boat with uplifted leg.

As we approached Rotterdam, Terns and Gulls grew more numerous and Cormorants became a characteristic feature of the river. Whether sitting on the water, in Loon-like posture, or flying with outstretched necks athwart the sky, or perched in ungainly attitudes on the poles which rose from the narrow dikes, they were always conspicuous, and always ugly. The Gulls were the small black-headed species found before near Mainz, but near Rotterdam several Herring Gulls appeared. The red-tiled villages, too, became more frequent. The incessant hammering of shipyards assailed the ears. Boats with high and decorated prows driven by dark, patched sails passed the steamer. Soon the masts of countless shipping appeared before us and the steamer made fast to her wharf in Rotterdam, leaving the Rhine and its summer birds far behind.



THE CORMORANT ROOKERIES OF THE LOFOTEN ISLANDS.

BY R. W. SHUFELDT, M. D.

OUR distinguished Corresponding Member, Professor Robert Collett of the Zoölogical Museum of Christiania, Norway, has for the past year or more been attempting the photography of the breeding sites of various species of Norwegian birds. Some of his recent results are very beautiful indeed, and last July (1895) when he was visiting the Lofoten Islands off the coast of Norway, he succeeded in obtaining some particularly good pictures of the breeding places of the Cormorant (*Phalacrocorax carbo*). One of these he has very recently sent me, to use as I see fit, and, as this species breeds upon our own North Atlantic coasts, I must believe that the reproduction of Professor Collett's excellent photograph, illustrating the present paper, will be of interest to our